

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
23 December 2004 (23.12.2004)

PCT

(10) International Publication Number
WO 2004/112151 A2

(51) International Patent Classification⁷: **H01L 31/00**

(21) International Application Number:

PCT/GB2004/002545

(22) International Filing Date: 11 June 2004 (11.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

0313617.3 12 June 2003 (12.06.2003) GB
0402687.8 6 February 2004 (06.02.2004) GB

(71) Applicant (for all designated States except US): **PATTERNING TECHNOLOGIES LIMITED [GB/GB]**; Fujifilm House, Boundary Way, Hemel Hempstead, Hertfordshire HP2 7RH (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **SPEAKMAN, Stuart [GB/GB]**; 7 Chapel Drive, Little Waltham, Chelmsford, Essex CM3 3LW (GB).

(74) Agents: **COZENS, Paul, Dennis et al.; Mathys & Squire, 100 Gray's Inn Road, London WC1X 8AL (GB)**.

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

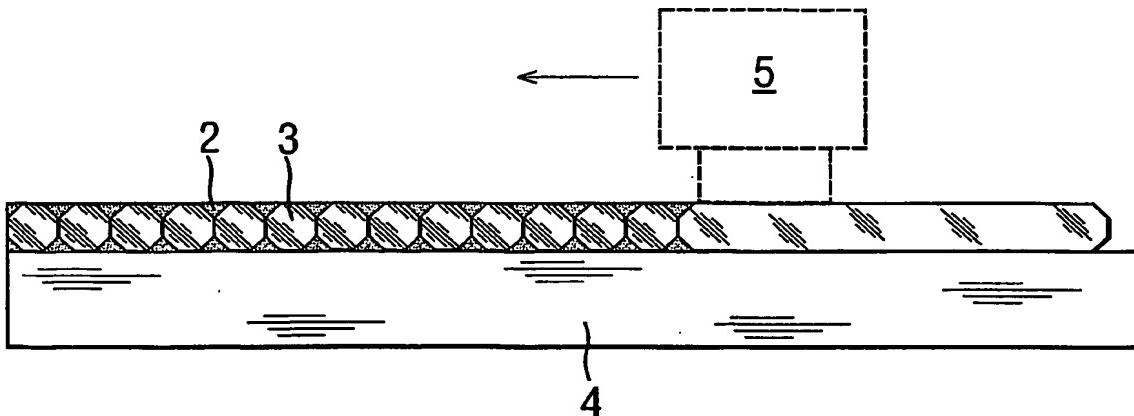
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: TRANSPARENT CONDUCTING STRUCTURES AND METHODS OF PRODUCTION THEREOF



WO 2004/112151 A2

(57) Abstract: Transparent electrical conductors comprising regions of high transparency and regions of lower transparency, but higher conductivity. This allows electrical connection through the conductor, while retaining its transparency for such applications as hand-held device display screens or transparent antennas, for example.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
23 December 2004 (23.12.2004)

PCT

(10) International Publication Number
WO 2004/112151 A3

(51) International Patent Classification⁷: H05K 3/12,
B41J 2/04 [GB/GB]; 7 Chapel Drive, Little Waltham, Chelmsford, Essex CM3 3LW (GB).

(21) International Application Number:
PCT/GB2004/002545

(74) Agent: MILHENCH, Mark, Lorne; Mintz Levin Cohn Ferris Glovsky and Popeo Intellectual Property LLP, The Rectory, 9 Ironmonger Lane, London EC2V 8EY (GB).

(22) International Filing Date: 11 June 2004 (11.06.2004)

(25) Filing Language: English

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

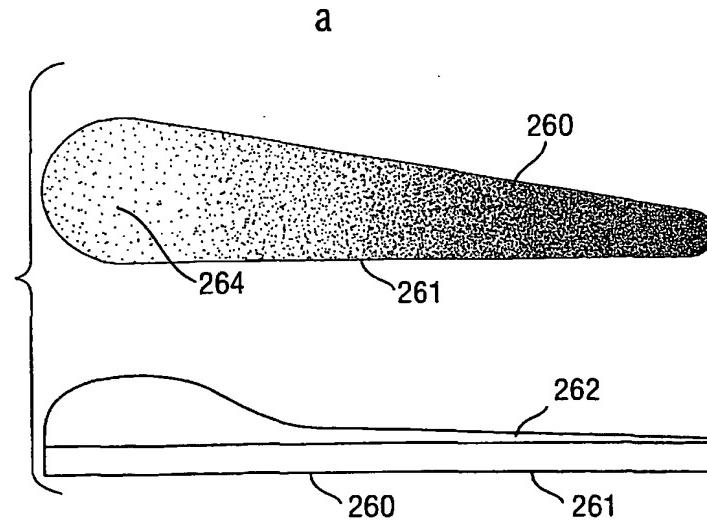
(26) Publication Language: English

(30) Priority Data:
0313617.3 12 June 2003 (12.06.2003) GB
0402687.8 6 February 2004 (06.02.2004) GB

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: TRANSPARENT CONDUCTING STRUCTURES AND METHODS OF PRODUCTION THEREOF



b

WO 2004/112151 A3

(57) Abstract: Transparent electrical conductors comprising regions of high transparency and regions of lower transparency, but higher conductivity. This allows electrical connection through the conductor, while retaining its transparency for such applications as hand-held device display screens or transparent antennas, for example.



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the International search report:
1 December 2005

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.